

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/011864 A1

(51) International Patent Classification⁷: **B01J 37/02**

TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/GB2004/003280

(22) International Filing Date: 28 July 2004 (28.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0318027.0 1 August 2003 (01.08.2003) GB

(71) Applicant (for all designated States except US): **GTL MICROSYSTEMS AG** [CH/CH]; Rigmstrasse 184, CH-6340 Baar (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BOWE, Michael, Joseph** [GB/GB]; 17 Balmoral Road, New Longton, Preston, Lancashire PR4 4JJ (GB). **LEE-TUFFNELL, Clive, Derek** [GB/GB]; 40 Martin Close, Poole, Dorset BH17 7XS (GB). **SEGAL, David, Leslie** [GB/GB]; 43 Foxborough Road, Radley, Abington, Oxfordshire OX14 3AB (GB). **JONES, Stuart, Leigh** [GB/GB]; 16 Kimberley Walk, Minworth, Sutton Coldfield, Birmingham B76 9RB (GB).

(74) Agents: **MANSFIELD, Peter, Turquand et al.**; Accentus plc, Patent Dept., 329 Harwell, Didcot, Oxfordshire OX11 0QJ (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **ALUMINA-COATED METAL STRUCTURE AND CATALYST STRUCTURE**

(57) Abstract: A metal substrate is coated with a layer of ceramic, by spraying droplets of a slurry of a ceramic precursor onto the substrate, the substrate being at a temperature between 500 °C and 750 °C. The ceramic comprises alumina, and is made macroporous by spraying a mixture of alumina sol and alumina particles with no more than 35 % by weight of dispersible alumina. Spraying onto a red-hot surface in this fashion leads to a very marked improvement in adhesion of the resulting ceramic to the metal substrate. A catalytically active material may then be incorporated in the ceramic layer, so as to form a catalyst structure (16).

WO 2005/011864 A1